

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Original) An automatic stop/start controller for a vehicle engine having an electric motor to drive the engine, and an automatic transmission, said automatic stop/start controller permitting said engine to stop or start without operation of an ignition key, comprising: a controller to start fuel supply to said engine after said engine is started by said electric motor and when it is determined that frictional engaging elements of said automatic transmission are engaged, in a case where said engine is started without the operation of the ignition key.

2. (Original) The automatic stop/start controller for the engine as defined in Claim 1, wherein said controller decreases the torque generated by said electric motor when the elapsed time from the beginning of the fuel supply is longer than a predetermined time.

3. (Original) The automatic stop/start controller for the engine as defined in Claim 2, wherein said electric motor performs functions of power-generating and of assisting said engine at least when the vehicle is running.

4. (Original) The automatic stop/start controller for the engine as defined in Claim 2, wherein said automatic transmission is a transmission that can change speeds by an oil pressure control.

5. (Original) The automatic stop/start controller for the engine as defined in Claim 1, wherein said electric motor

performs functions of power-generating and of assisting said engine at least when the vehicle is running.

6. (Original) The automatic stop/start controller for the engine as defined in Claim 1, wherein said automatic transmission is a transmission that can change speeds by an oil pressure control.

7. (New) A hybrid vehicle, comprising:
an internal combustion engine;
an electric motor-generator drivingly connected to the engine to assist in driving of said engine when functioning as a motor;
an automatic change-speed transmission drivingly connecting said engine and said motor to said vehicle wheels, said transmission having a rotational turbine associated therewith and also having frictional engaging drive elements; and
an automatic stop/start controller for permitting starting and stopping of the engine without operation of an ignition key;
said controller starting the supply of fuel to said engine after said engine is started by said electric motor and when it has been determined that the frictional engaging drive elements of said automatic transmission are engaged.

8. (New) A vehicle according to Claim 7, wherein the controller functions to start supplying fuel to the engine when the engine speed is a predetermined speed difference greater than the rotational speed of the transmission turbine.

9. (New) A vehicle according to Claim 8, wherein the controller decreases the torque generated by the motor when the elapsed time from the beginning of fuel supply is greater than a predetermined reference time interval.

10. (New) A process for controlling the startup of a internal combustion engine having a motor generator coupled thereto for assisting in driving said engine, and an automatic transmission drivingly coupled to the output of said engine and said motor, the transmission having a rotatable turbine wheel and having frictional drive engaging elements, and a controller for controlling said motor to permit starting and stopping of said engine without use of an ignition key, comprising the steps of:

energizing the motor to effect starting of said engine;

initiating restart of an automatically stopped engine without operation of an ignition key by first determining if the engine speed exceeds the transmission turbine speed by a predetermined reference amount;

when the engine speed exceeds the turbine speed by said predetermined differential, initiating the supply of fuel to the engine;

after initiation of fuel supplied to the engine, determining whether elapsed time from the beginning of fuel supply is greater than a predefined reference time; and

if the elapsed time exceeds said reference time, then decreasing the assist torque provided by the motor.